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REED[14] has described three fungous diseases of the cultivated ginseng. These diseases are not due to the same fungi reported by VAN HOOK[15] as causing ginseng diseases in New York. The first of these is a stem anthracnose due to *Vermicularia dematium*. The second is a leaf anthracnose due to *Pestalozzia funeria*. These two diseases he finds may be controlled by spraying with the usual Bordeaux mixture. The third disease described is a wilt due to *Neocosmospora vasinfecta nivea*. This same variety causes a wilt disease of the watermelon, while the species itself causes a wilt disease of cotton and the cowpea. REED finds that the wilt never occurs except in association with or following an attack of the stem anthracnose. In other words, the wilt fungus seems to be able to gain entrance to the ginseng plant through the lesions on the stem due to this other stem disease. It is also possible that the wilt fungus enters the plant at the scar left where the stem of the preceding year fell off. It should be recalled in this connection that the cotton and cowpea wilt-fungus enters the host through the roots largely after injury by the nematode worm.—E. MEAD WILCOX.

SORAUER[16] describes a peculiar disease of *Cereus nycticalis* Lk. which results from proliferation of cells of the inner layers of the cortex. This produces on the stems slightly elevated hygrophanous areas which increase in size until they occupy a large part of the stem and extend to the wood. These turn brown and then black and finally collapse, leaving depressed wounds in the stem. On account of the position of the proliferating cells SORAUER designates these growths as "internal intumescences." The diseased regions are almost free from starch, but they are rich in glucose, which the writer regards as the cause of the unusual growth. This condition is brought about by high temperature and excessive moisture. When these factors were changed no "intumescences" were formed. —H. HASSELBRING.

The maturation mitoses.—A critical review of the entire subject of the maturation mitoses in both plants and animals has been prepared by GRÉGOIRE.[17] Part I, dealing with stages from the metaphase of the first mitosis in the mother-cell up to the telophase of the second division, contains 155 pages and 147 text figures, of which 35 pages and 35 figures relate to sporogenesis in plants, 90 pages and 112 figures to spermatogenesis and oogenesis in animals, and the remaining 30 pages to a comparative study. The space given to animal mitoses increases the value of the work to botanists, who are already more or less familiar with the botanical literature. At the close of the botanical section the conclusion

14 REED, H. S., Three fungous diseases of the cultivated ginseng. Bull. Mo. Exp. Stat. 69:41–66. *figs. 1–9.* 1905.

15 VAN HOOK, J. M., Diseases of ginseng. Bull. N. Y. Cornell Exp. Stat. 219: 163–186. *figs. 18–42.* 1904.

16 SORAUER, P., Zeitr. Pflanzenkrankheiten **16**:5–10. *pl. 2.* 1906.

17 GRÉGOIRE, VICTOR, Les resultats acquirés sur les cinèses de maturation dans les deux règnes. Premier mémoire. Revue critique de la littérature. La Cellule **22**:221–376. *figs. 147.* 1905.

is reached that the definitive chromosomes of the first mitosis constitute two branches which are variously placed with relation to each other. These two branches are the daughter chromosomes of the first mitosis. During the metaphase or anaphase these daughter chromosomes split longitudinally. In the telophase no complete spirem is formed nor do the nuclei reach the resting condition, but the chromosomes preserve their individuality so that the longitudinal portions which appeared in the anaphase of the first mitosis become the daughter chromosomes of the second mitosis. Consequently, the second mitosis cannot be a reduction division. Whether a reduction takes place at the first mitosis will be discussed in the second memoir. In the general résumé the conclusion is reached that in both plants and animals the definitive chromosomes of the first mitosis, at the equatorial plate stage, are composed of two continuous branches. There are two categories of theories as to the significance of the second mitosis, the one holding it as an equation division and the other as a reduction division.

In regard to the two constituent branches of the chromosomes of the first mitosis, there are two possibilities: if they are longitudinal pieces of a segment of a primary chromosome, the heterotypic division is an equation division; if, on the other hand, each of the two branches is a complete somatic chromosome, there is a true reduction in the WEIS MAN sense. The important question is, How are the chromosomes of the first mitosis formed? This will be the subject of the second memoir.

The work will be welcomed by cytologists, for the subject matter is well arranged and conflicting theories are impartially discussed. While the title indicates only a critical review of the literature, the work is something more, because so much botanical investigation has been done in the writer's own laboratory, and because even the zoological section has not been written entirely from the literature, but from the writer's own preparations and numerous preparations loaned by prominent investigators of animal cytology.—CHARLES J. CHAMBERLAIN.

Nova in hybrids.—As has been already noted[18] in these pages, TSCHERMAK found a large number of instances in which *nova* appeared in hybrid beans and peas, in very definite ratios which were readily related to the ordinary Mendelian ratio. These *nova* were explained by him as characters latent in one of the parental strains, but rendered patent by the energizing effect of the cross-fertilization. CORRENS has adopted[19] for similar *nova* in Mirabilis the hypothesis of CUENOT, which makes such new characters the result of the combined action of two or more pairs of units, the positive member of some or all but one of these pairs of units being invisible because of the absence of the other member of the combination. For example, an albino mouse bred with a brown mouse may produce black offspring, because the albino contains a unit which

[18] See BOT. GAZETTE **39**:302. Apr. 1905.

[19] See BOT. GAZETTE **40**:234. Sept. 1905.